CLAIMS

1. A leg compacting system for compacting inwards a group of legs of an anastomotic connector towards a central location thereof, comprising:

a coupler for coupling to a delivery system on which said connector is mounted; and

a plurality of leg confiners, said leg confiners configured to selectively move in an inwards direction and said confiners configured to have a resting compacted configuration in which a space of between 7 and 1 mm in width is maintained between the innermost leg contacting sections of said confiners such that a graft vessel suitable for mounting on said connector can be passed between said confiners.

2. A system according to claim 1, wherein said resting configuration is an innermost configuration.

3. A system according to claim 1, wherein said space is less than 5 mm in width.

4. A system according to claim 1, wherein said space is oval or circular.

5. A leg compacting system according to claim 1, configured to be selectively dismounted from said delivery system.

6. A leg compacting system according to claim 1, comprising a control for splitting at least a portion of said system for removal from said delivery system.

7. A leg compacting system according to claim 1, wherein said confiners move in a radial direction.

8. A leg compacting system according to claim 1, comprising a rotatable control which selectively moves said confiners in a radial direction.

9. A leg compacting system according to claim 1, wherein said system is permanently mounted on said delivery system.

10. A leg compacting system according to claim 1, wherein each confiner is configured to receive a single leg.

11. A leg compacting system according to claim 1, wherein said plurality of leg confiners are configured to release legs when moved outwards, said release being not simultaneous for all legs.

12. A leg compacting system for compacting inwards a group of legs of an anastomotic connector towards a central location thereof, comprising:

a coupler for coupling to a delivery system on which said connector is mounted; and

a plurality of leg confiners, configured to selectively move in an inward direction and to automatically engage said legs while moving inwards.

13. A leg compacting system according to claim 12, wherein each leg confiner is configured to receive a plurality of legs.

14. A leg compacting system according to claim 12, wherein each leg confiner is configured to receive a single leg.

15. A leg compacting system according to claim 12, wherein said motion is radial.

16. A leg compacting system for compacting inwards a group of legs of an anastomotic connector towards a central location thereof, comprising:

at least one wire arranged to selectively move inwards, from a position outwards of the legs, thereby compacting the legs; and

a controller which is operative to selectively moving said wire.

17. A leg compacting system according to claim 16, wherein said wire is adapted to engage said legs near a hook section of the legs.

18. A leg compacting system according to claim 16, comprising at least two wires configured to compact the legs simultaneously from two directions.

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19. A leg compacting system according to claim 16, wherein said wire comprises a side wall adapted to prevent legs from slipping away from compacting.

20. A leg arranging device for use with a noose, comprising:

a body adapted to receive a delivery system on which a plurality of connector legs are mounted;

a noose receptacle arranged around an expected position of said legs, said receptacle including an inner block which selectively blocks said noose from leaving said receptacle to engage said legs; and

a control is operative removes said block.

21. A device according to claim 20, wherein said control is automatically activated to release said noose once a delivery system is inserted in said body and said legs are at said expected position.

22. A device according to claim 20, wherein said control is manually activated.

23. A device according to claim 20, comprising a noose controller which pre-stresses said noose to reduce its diameter.

24. A leg compacting system for compacting inwards a group of legs of an anastomotic connector towards a central location thereof, comprising:

at least one element adapted to compact a plurality of connector legs to a compacted configuration; and

at least controller configured to activate said element thereby releasing said legs,

wherein, said at least one element is configured to release certain connector legs before other ones of said legs as said element is activated.

25. A system according to claim 24, wherein said element is configured to first release legs that are on a long axis of an incision into which said legs are inserted for connection.

26. A system according to claim 24, wherein said at least one element defines a plurality of

notches each configured for receiving at least one leg and wherein an end notch of said at least one element is configured to release a leg earlier than a leg held by a more central notch.

27. A leg compacting system for compacting inwards a group of legs of an anastomotic connector towards a central location thereof, comprising:

a cap adapted to mount on a delivery system, said cap comprising:

at least two sections adapted to form said cap;

each of said sections having a front plate defining a plurality of receptacles for legs; and

a control adapted to split said cap into said sections.

28. A method of using a noose-type compacting system, comprising:

mounting a noose on a plurality of connector legs;

compacting the legs using the noose;

inserting said compacted legs into an aperture in a blood vessel;

releasing and tightening said noose until a desired leg configuration is achieved; and

removing said noose.

29. A method according to claim 28, wherein removing said noose comprises cutting an extension of said noose.

30. A method according to claim 28, wherein mounting comprises:

arranging said noose around said legs, such that said noose is pre-stressed; and

releasing said noose to engage said legs.

31. An anastomosis connector delivery system, comprising:

a body having an end adapted to mount a connector thereon;

a handle adapted to be attached to said body at a plurality of different orientation positions relative to said body;

at least one control for deploying said connector, said handle being devoid of controls for deploying the connector.

32. A system according to claim 31, wherein said handle is a pistol grip.

33. A system according to claim 31, wherein said control is shaped as and moves as a trigger.

34. An anastomosis delivery system, comprising:

a body having a handle section and having a plurality of connector legs attached to one end thereof;

an activation control; and

a leg retraction and tearing mechanism,

wherein said control both retracts said legs relative to said body and tears said legs and wherein said control applies said retracting and said tearing without requiring movement of said handle by a user.

35. A delivery system according to claim 34, wherein said control releases a spring which provides said tearing.

36. A delivery system according to claim 34, wherein said body comprises a moving section and a stationary section, such that said retraction of said legs moves said moving section towards said legs and does not move said legs relative to said stationary section.

37. A delivery system according to claim 35, comprising a recoil absorber which absorbs at least part of a recoil of said spring prior to such recoil affecting said handle/

38. A sterile anastomosis connector leg manipulator, comprising:

a handle; and

a two pronged extension defining a receptacle between the prongs, said receptacle being sized to receive one leg of an anastomosis connector suitable for attaching a vessel of a diameter smaller than 4 mm, said prongs being thin enough to fit between adjacent legs of such a connector.

39. A leg arranging system for arranging legs of a blood vessel anastomotic connector, comprising:

a coupler for coupling to a delivery system on which said connector is mounted;

a body; and

a plurality of notches defined by said body, each of said notch configured to hold a single leg.

40. A leg arranging system according to claim 39, wherein said notches prevent said legs from crossing.

41. A leg arranging system according to claim 39, wherein said notches position said legs in an inwards compacted configuration.

42. A method of mounting a graft, comprising:

arranging a plurality of connector legs in a leg arranger, such that their relative positions are fixed in a plane perpendicular to a general orientation of said legs;

providing a graft between said legs; and

mounting said graft on said arranged legs.

43. A method according to claim 42, wherein said legs are arranged to have an inward compacted configuration.

44. A method of inserting a graft into a blood vessel, comprising:

arranging a plurality of connector legs in a leg arranger to a have a desired mutual positional relationship and an inward compacted configuration; and

inserting said arranged legs into an aperture of a blood vessel.

45. An anastomotic connector for blood vessels, comprising:

a ring; and

a plurality of legs arranged around said ring, wherein at least two legs at opposing sides of said ring are configured to bend radially out more than other of said legs.

46. An anastomotic connector for blood vessels, comprising:

a ring; and

a plurality of legs arranged around said ring, wherein at least two legs at opposing sides of said ring are configured to be stiffer than other of said legs.

47. An anastomotic connector kit, comprising:
a plurality of leg segments arranged in a generally circular configuration; and
a plurality f leg locking segments, each adapted to be locked to one leg,
wherein, wherein at least two legs at opposing sides of said circle are configured to be stiffer than other of said legs.

48. An anastomotic connector kit, comprising:
a plurality of leg segments arranged in a generally circular configuration; and
a plurality f leg locking segments, each adapted to be locked to one leg,
wherein, wherein at least two legs at opposing sides of said circle are configured to bend radially out more than other of said legs.

49. A connector kit, comprising:
a sterile package;
a connector having a plurality of forward legs; and
a band radially compacting said legs towards a center, within the sterile package.

50. A method of mounting a graft on a connector delivery system capsule, comprising:
axially splitting said capsule;
laying said graft in said capsule;
closing said capsule; and
mounting said capsule on a connector of said capsule.

51. Apparatus for mounting a graft on a spoilable graft capsule, comprising:
a splitable connector capsule;
a body including a receptacle large enough to hold a split capsule and including a slot in its side; and
a control which selectable opens said body so said capsule can open.

52. Apparatus according to claim 51, wherein said control actively splits said capsule.

53. Apparatus according to claim 51, wherein said body is adapted to radially compact legs

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of a connector of said capsule.

54. A method of graft attachment to a target vessel, comprising:
inserting a plurality of legs into an aperture in said target vessel;
releasing at least two of said legs so that said at least two legs stretch said aperture; and
completing said anastomosis.

55. A method according to claim 54, wherein said releasing comprises releasing to ends of an incision.

56. A method of graft attachment to a target vessel, comprising:
inserting a plurality of legs into an aperture in said target vessel;
mechanically retracting said legs relative to a body of a delivery system; and
mechanically tearing said legs,
wherein said retracting and said tearing occur without motion of said legs relative to said vessel.

57. A method of performing an anastomosis, comprising:
forming an opening a target vessel;
inserting a shunt into said target vessel to bypass said opening;
inserting a plurality of anastomosis connector legs into said aperture;
removing said shunt between said legs, while said legs are in said aperture; and
completing said anastomosis.